



# SEQUENCE LISTING

<110> ASHTON-RICKARDT, PHILIP

<120> METHODS AND COMPOSITIONS FOR THE INHIBITION OF  
CATHEPSINS

<130> ARCD:390US

<140> 10/782,401

<141> 2004-02-19

<150> 60/448,285

<151> 2003-02-19

<160> 25

<170> PatentIn Ver. 2.1

<210> 1

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<212> DNA

<213> Mus musculus

<400> 1

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<210> 2

<211> 440

<212> PRT

<213> Mus musculus

<400> 2

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Tyr Arg Lys Leu Val Leu Lys Asn Pro Asp Glu Asn Val Val Phe Ser	50	55	60
Pro Phe Ser Ile Cys Thr Ala Leu Ala Leu Leu Ser Leu Gly Ala Lys	65	70	75
Ser Asn Thr Leu Lys Glu Ile Leu Glu Gly Leu Lys Phe Asn Leu Thr	85	90	95
Glu Thr Pro Glu Pro Asp Ile His Gln Gly Phe Arg Tyr Leu Leu Asp	100	105	110
Leu Leu Ser Gln Pro Gly Asn Gln Val Gln Ile Ser Thr Gly Ser Ala	115	120	125
Leu Phe Ile Glu Lys His Leu Gln Ile Leu Ala Glu Phe Lys Glu Lys	130	135	140
Ala Arg Ala Leu Tyr Gln Ala Glu Ala Phe Thr Ala Asp Phe Gln Gln	145	150	155
Pro Leu Lys Ala Thr Lys Leu Ile Asn Asp Tyr Val Ser Asn His Thr	165	170	175
Gln Gly Lys Ile Lys Glu Leu Ile Ser Gly Leu Lys Glu Ser Thr Leu	180	185	190
Met Val Leu Val Asn Tyr Ile Tyr Phe Lys Gly Lys Trp Lys Asn Pro	195	200	205
Phe Asp Pro Asn Asp Thr Phe Lys Ser Glu Phe Tyr Leu Asp Glu Lys	210	215	220
Arg Ser Val Ile Val Ser Met Met Lys Thr Gly Tyr Leu Thr Thr Pro	225	230	235
Tyr Phe Arg Asp Glu Glu Leu Ser Cys Thr Val Val Glu Leu Lys Tyr	245	250	255
Thr Gly Asn Ala Ser Ala Met Phe Ile Leu Pro Asp Gln Gly Arg Met	260	265	270
Gln Gln Val Glu Ala Ser Leu Gln Pro Glu Thr Leu Arg Lys Trp Lys	275	280	285
Asn Ser Leu Lys Pro Arg Met Ile His Glu Leu Arg Leu Pro Lys Phe	290	295	300
Ser Ile Ser Thr Asp Tyr Ser Leu Glu His Ile Leu Pro Glu Leu Gly			

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Ile Arg Glu Val Phe Ser Thr His Ala Asp Leu Ser Ala Ile Thr Gly						
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Thr Lys Asp Leu Arg Val Ser Gln Val Val His Lys Ala Val Leu Asp						
	340			345		350
Val Ala Glu Lys Gly Thr Glu Ala Ala Ala Thr Gly Met Ala Gly						
	355			360		365
Val Gly Cys Cys Ala Val Phe Asp Phe Leu Glu Ile Phe Phe Asn Arg						
	370			375		380
Pro Phe Leu Met Ile Ile Ser Asp Thr Lys Ala His Ile Ala Leu Phe						
	385			390		400
Met Ala Lys Val Thr Asn Pro Glu Arg Ser Thr Asn Phe Pro Asn Gly						
	405			410		415
Glu Gly Ala Ser Ser Gln Arg Leu Glu Ser Lys Arg Leu Cys Phe Gly						
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<210> 3

<211> 379

<212> PRT

<213> Homo sapiens

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Phe Ser Ile Ser Ser Ala Met Ala Met Val Phe Leu Gly Thr Arg Gly														
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Asn Thr Ala Ala Gln Leu Ser Lys Thr Phe His Phe Asn Thr Val Glu														
			50					55					60	
Glu Val His Ser Arg Phe Gln Ser Leu Asn Ala Asp Ile Asn Lys Arg														
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Gly Ala Ser Tyr Ile Leu Lys Leu Ala Asn Arg Leu Tyr Gly Glu Lys														
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Thr Tyr Asn Phe Leu Pro Glu Phe Leu Val Ser Thr Gln Lys Thr Tyr														
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Gly Ala Asp Leu Ala Ser Val Asp Phe Gln His Ala Ser Glu Asp Ala														
			115					120					125	

Arg Lys Thr Ile Asn Gln Trp Val Lys Gly Gln Thr Glu Gly Lys Ile  
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 Pro Glu Leu Leu Ala Ser Gly Met Val Asp Asn Met Thr Lys Leu Val  
 145 150 155 160  
 Leu Val Asn Ala Ile Tyr Phe Lys Gly Asn Trp Lys Asp Lys Phe Met  
 165 170 175  
 Lys Glu Ala Thr Thr Asn Ala Pro Phe Arg Leu Asn Lys Lys Asp Arg  
 180 185 190  
 Lys Thr Val Lys Met Met Tyr Gln Lys Lys Lys Phe Ala Tyr Gly Tyr  
 195 200 205  
 Ile Glu Asp Leu Lys Cys Arg Val Leu Glu Leu Pro Tyr Gln Gly Glu  
 210 215 220  
 Glu Leu Ser Met Val Ile Leu Leu Pro Asp Asp Ile Glu Asp Glu Ser  
 225 230 235 240  
 Thr Gly Leu Lys Lys Ile Glu Glu Gln Leu Thr Leu Glu Lys Leu His  
 245 250 255  
 Glu Trp Thr Lys Pro Glu Asn Leu Asp Phe Ile Glu Val Asn Val Ser  
 260 265 270  
 Leu Pro Arg Phe Lys Leu Glu Glu Ser Tyr Thr Leu Asn Ser Asp Leu  
 275 280 285  
 Ala Arg Leu Gly Val Gln Asp Leu Phe Asn Ser Ser Lys Ala Asp Leu  
 290 295 300  
 Ser Gly Met Ser Gly Ala Arg Asp Ile Phe Ile Ser Lys Ile Val His  
 305 310 315 320  
 Lys Ser Phe Val Glu Val Asn Glu Glu Gly Thr Glu Ala Ala Ala Ala  
 325 330 335  
 Thr Ala Gly Ile Ala Thr Phe Cys Met Leu Met Pro Glu Glu Asn Phe  
 340 345 350  
 Thr Ala Asp His Pro Phe Leu Phe Phe Ile Arg His Asn Ser Ser Gly  
 355 360 365  
 Ser Ile Leu Phe Leu Gly Arg Phe Ser Ser Pro  
 370 375

<210> 4

<211> 415

<212> PRT

<213> Homo sapiens

<400> 4

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 Trp Ser Ile Ser Ser Thr Met Ala Met Val Tyr Met Gly Ser Arg Gly  
 35 40 45  
 Ser Thr Glu Asp Gln Met Ala Lys Val Leu Gln Phe Asn Glu Val Gly  
 50 55 60  
 Ala Asn Ala Val Thr Pro Met Thr Pro Glu Asn Phe Thr Ser Cys Gly  
 65 70 75 80  
 Phe Met Gln Gln Ile Gln Lys Gly Ser Tyr Pro Asp Ala Ile Leu Gln  
 85 90 95  
 Ala Gln Ala Ala Asp Lys Ile His Ser Ser Phe Arg Ser Leu Ser Ser  
 100 105 110  
 Ala Ile Asn Ala Ser Thr Gly Asn Tyr Leu Leu Glu Ser Val Asn Lys  
 115 120 125  
 Leu Phe Gly Glu Lys Ser Ala Ser Phe Arg Glu Glu Tyr Ile Arg Leu  
 130 135 140  
 Cys Gln Lys Tyr Tyr Ser Ser Glu Pro Gln Ala Val Asp Phe Leu Glu  
 145 150 155 160  
 Cys Ala Glu Glu Ala Arg Lys Lys Ile Asn Ser Trp Val Lys Thr Gln  
 165 170 175  
 Thr Lys Gly Lys Ile Pro Asn Leu Leu Pro Glu Gly Ser Val Asp Gly  
 180 185 190  
 Asp Thr Arg Met Val Leu Val Asn Ala Val Tyr Phe Lys Gly Lys Trp  
 195 200 205  
 Lys Thr Pro Phe Glu Lys Lys Leu Asn Gly Leu Tyr Pro Phe Arg Val  
 210 215 220  
 Asn Ser Ala Gln Arg Thr Pro Val Gln Met Met Tyr Leu Arg Glu Lys  
 225 230 235 240  
 Leu Asn Ile Gly Tyr Ile Glu Asp Leu Lys Ala Gln Ile Leu Glu Leu  
 245 250 255  
 Pro Tyr Ala Gly Asp Val Ser Met Phe Leu Leu Leu Pro Asp Glu Ile  
 260 265 270  
 Ala Asp Val Ser Thr Gly Leu Glu Leu Leu Glu Ser Glu Ile Thr Tyr  
 275 280 285  
 Asp Lys Leu Asn Lys Trp Thr Ser Lys Asp Lys Met Ala Glu Asp Glu  
 290 295 300  
 Val Glu Val Tyr Ile Pro Gln Phe Lys Leu Glu Glu His Tyr Glu Leu  
 305 310 315 320





Ser Ile Thr Ser Ala Leu Gly Met Val Leu Leu Gly Ala Lys Asp Asn  
 35 40 45  
 Thr Ala Gln Gln Ile Ser Lys Val Leu His Phe Asp Gln Val Thr Glu  
 50 55 60  
 Asn Thr Thr Glu Lys Ala Ala Thr Tyr His Val Asp Arg Ser Gly Asn  
 65 70 75 80  
 Val His His Gln Phe Gln Lys Leu Leu Thr Glu Phe Asn Lys Ser Thr  
 85 90 95  
 Asp Ala Tyr Glu Leu Lys Ile Ala Asn Lys Leu Phe Gly Glu Lys Thr  
 100 105 110  
 Tyr Gln Phe Leu Gln Glu Tyr Leu Asp Ala Ile Lys Lys Phe Tyr Gln  
 115 120 125  
 Thr Ser Val Glu Ser Thr Asp Phe Ala Asn Ala Pro Glu Glu Ser Arg  
 130 135 140  
 Lys Lys Ile Asn Ser Trp Val Glu Ser Gln Thr Asn Glu Lys Ile Lys  
 145 150 155 160  
 Asn Leu Phe Pro Asp Gly Thr Ile Gly Asn Asp Thr Thr Leu Val Leu  
 165 170 175  
 Val Asn Ala Ile Tyr Phe Lys Gly Gln Trp Glu Asn Lys Phe Lys Lys  
 180 185 190  
 Glu Asn Thr Lys Glu Glu Lys Phe Trp Pro Asn Lys Asn Thr Tyr Lys  
 195 200 205  
 Ser Val Gln Met Met Arg Gln Tyr Asn Ser Phe Asn Phe Ala Leu Leu  
 210 215 220  
 Glu Asp Val Gln Ala Lys Val Leu Glu Ile Pro Tyr Lys Gly Lys Asp  
 225 230 235 240  
 Leu Ser Met Ile Val Leu Leu Pro Asn Glu Ile Asp Gly Leu Gln Lys  
 245 250 255  
 Leu Glu Glu Lys Leu Thr Ala Glu Lys Leu Met Glu Trp Thr Ser Leu  
 260 265 270  
 Gln Asn Met Arg Glu Thr Cys Val Asp Leu His Leu Pro Arg Phe Lys  
 275 280 285  
 Met Glu Glu Ser Tyr Asp Leu Lys Asp Thr Leu Arg Thr Met Gly Met  
 290 295 300  
 Val Asn Ile Phe Asn Gly Asp Ala Asp Leu Ser Gly Met Thr Trp Ser  
 305 310 315 320  
 His Gly Leu Ser Val Ser Lys Val Leu His Lys Ala Phe Val Glu Val  
 325 330 335



Thr Glu Glu Gly Val Glu Ala Ala Ala Thr Ala Val Val Val Val  
 340 345 350  
 Glu Leu Ser Ser Pro Ser Thr Asn Glu Glu Phe Cys Cys Asn His Pro  
 355 360 365  
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 Gly Arg Phe Ser Ser Pro  
 385 390

<210> 7  
 <211> 376  
 <212> PRT  
 <213> Homo sapiens

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 Ser Met Ser Cys Ala Leu Ala Met Val Tyr Met Gly Ala Lys Gly Asn  
 35 40 45  
 Thr Ala Ala Gln Met Ala Gln Ile Leu Ser Phe Asn Lys Ser Gly Gly  
 50 55 60  
 Gly Gly Asp Ile His Gln Gly Phe Gln Ser Leu Leu Thr Glu Val Asn  
 65 70 75 80  
 Lys Thr Gly Thr Gln Tyr Leu Leu Arg Val Ala Asn Arg Leu Phe Gly  
 85 90 95  
 Glu Lys Ser Cys Asp Phe Leu Ser Ser Phe Arg Asp Ser Cys Gln Lys  
 100 105 110  
 Phe Tyr Gln Ala Glu Met Glu Glu Leu Asp Phe Ile Ser Ala Val Glu  
 115 120 125  
 Lys Ser Arg Lys His Ile Asn Thr Trp Val Ala Glu Lys Thr Glu Gly  
 130 135 140  
 Lys Ile Ala Glu Leu Leu Ser Pro Gly Ser Val Asp Pro Leu Thr Arg  
 145 150 155 160  
 Leu Val Leu Val Asn Ala Val Tyr Phe Arg Gly Asn Trp Asp Gly Gln  
 165 170 175  
 Phe Asp Lys Glu Asn Thr Glu Glu Arg Leu Phe Lys Val Ser Lys Asn  
 180 185 190  
 Glu Glu Lys Pro Val Gln Met Met Phe Lys Gln Ser Thr Phe Lys Lys  
 195 200 205

Thr Tyr Ile Gly Glu Ile Phe Thr Gln Ile Leu Val Leu Pro Tyr Val  
 210 215 220  
 Gly Lys Glu Leu Asn Met Ile Ile Met Leu Pro Asp Glu Thr Thr Asp  
 225 230 235 240  
 Leu Arg Thr Val Glu Lys Glu Leu Thr Tyr Glu Lys Phe Val Glu Trp  
 245 250 255  
 Thr Arg Leu Asp Met Met Asp Glu Glu Glu Val Glu Val Ser Leu Pro  
 260 265 270  
 Arg Phe Lys Leu Glu Glu Ser Tyr Asp Met Glu Ser Val Leu Arg Asn  
 275 280 285  
 Leu Gly Met Thr Asp Ala Phe Glu Leu Gly Lys Ala Asp Phe Ser Gly  
 290 295 300  
 Met Ser Gln Thr Asp Leu Ser Leu Ser Lys Val Val His Lys Ser Phe  
 305 310 315 320  
 Val Glu Val Asn Glu Glu Gly Thr Glu Ala Ala Ala Ala Thr Ala Ala  
 325 330 335  
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 340 345 350  
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 Phe Cys Gly Arg Phe Ser Ser Pro  
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<210> 8  
 <211> 374  
 <212> PRT  
 <213> Homo sapiens

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 Met Ser Ile Ser Ser Ala Leu Ala Met Val Phe Met Gly Ala Lys Gly  
 35 40 45  
 Ser Thr Ala Ala Gln Met Ser Gln Ala Leu Cys Leu Tyr Lys Asp Gly  
 50 55 60  
 Asp Ile His Arg Gly Phe Gln Ser Leu Leu Ser Glu Val Asn Arg Thr  
 65 70 75 80  
 Gly Thr Gln Tyr Leu Leu Arg Thr Ala Asn Arg Leu Phe Gly Glu Lys

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Ser	Glu	Val	Leu	Asp	Ala	Gly	Thr	Val	Asp	Pro	Leu	Thr	Lys	Leu	Val				
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Leu	Val	Asn	Ala	Ile	Tyr	Phe	Lys	Gly	Lys	Trp	Asn	Glu	Gln	Phe	Asp				
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Arg	Lys	Tyr	Thr	Arg	Gly	Met	Leu	Phe	Lys	Thr	Asn	Glu	Glu	Lys	Lys				
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Thr	Val	Gln	Met	Met	Phe	Lys	Glu	Ala	Lys	Phe	Lys	Met	Gly	Tyr	Ala				
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Asp	Glu	Val	His	Thr	Gln	Val	Leu	Glu	Leu	Pro	Tyr	Val	Glu	Glu	Glu				
	210					215					220								
Leu	Ser	Met	Val	Ile	Leu	Leu	Pro	Asp	Asp	Asn	Thr	Asp	Leu	Ala	Val				
225					230					235					240				
Val	Glu	Lys	Ala	Leu	Thr	Tyr	Glu	Lys	Phe	Lys	Ala	Trp	Thr	Asn	Ser				
				245					250					255					
Glu	Lys	Leu	Thr	Lys	Ser	Lys	Val	Gln	Val	Phe	Leu	Pro	Arg	Leu	Lys				
			260					265					270						
Leu	Glu	Glu	Ser	Tyr	Asp	Leu	Glu	Pro	Phe	Leu	Arg	Arg	Leu	Gly	Met				
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Ile	Asp	Ala	Phe	Asp	Glu	Ala	Lys	Ala	Asp	Phe	Ser	Gly	Met	Ser	Thr				
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Glu	Lys	Asn	Val	Pro	Leu	Ser	Lys	Val	Ala	His	Lys	Cys	Phe	Val	Glu				
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Val	Asn	Glu	Glu	Gly	Thr	Glu	Ala	Ala	Ala	Ala	Thr	Ala	Val	Val	Arg				
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Asn	Ser	Arg	Cys	Ser	Arg	Met	Glu	Pro	Arg	Phe	Cys	Ala	Asp	His	Pro				
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Phe	Leu	Phe	Phe	Ile	Arg	Arg	His	Lys	Thr	Asn	Cys	Ile	Leu	Phe	Cys				
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<210> 9  
<211> 376  
<212> PRT  
<213> Homo sapiens

<400> 9

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			20				25					30			
Val	Ser	Ile	Ser	Ser	Ala	Leu	Ala	Met	Val	Leu	Leu	Gly	Ala	Lys	Gly
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Asn	Thr	Ala	Thr	Gln	Met	Ala	Gln	Ala	Leu	Ser	Leu	Asn	Thr	Glu	Glu
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Asp	Ile	His	Arg	Ala	Phe	Gln	Ser	Leu	Leu	Thr	Glu	Val	Asn	Lys	Ala
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Gly	Thr	Gln	Tyr	Leu	Leu	Arg	Thr	Ala	Asn	Arg	Leu	Phe	Gly	Glu	Lys
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Thr	Cys	Gln	Phe	Leu	Ser	Thr	Phe	Lys	Glu	Ser	Cys	Leu	Gln	Phe	Tyr
			100					105					110		
His	Ala	Glu	Leu	Lys	Glu	Leu	Ser	Phe	Ile	Arg	Ala	Ala	Glu	Glu	Ser
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Arg	Lys	His	Ile	Asn	Thr	Trp	Val	Ser	Lys	Lys	Thr	Glu	Gly	Lys	Ile
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Leu	Val	Asn	Ala	Ile	Tyr	Phe	Lys	Gly	Lys	Trp	Asn	Glu	Pro	Phe	Asp
			165					170						175	
Glu	Thr	Tyr	Thr	Arg	Glu	Met	Pro	Phe	Lys	Ile	Asn	Gln	Glu	Glu	Gln
			180					185					190		
Arg	Pro	Val	Gln	Met	Met	Tyr	Gln	Glu	Ala	Thr	Phe	Lys	Leu	Ala	His
		195					200					205			
Val	Gly	Glu	Val	Arg	Ala	Gln	Leu	Leu	Glu	Leu	Pro	Tyr	Ala	Arg	Lys
	210					215					220				
Glu	Leu	Ser	Leu	Leu	Val	Leu	Leu	Pro	Asp	Asp	Gly	Val	Glu	Leu	Ser
	225				230					235					240
Thr	Val	Glu	Lys	Ser	Leu	Thr	Phe	Glu	Lys	Leu	Thr	Ala	Trp	Thr	Lys
				245					250					255	
Pro	Asp	Cys	Met	Lys	Ser	Thr	Glu	Val	Glu	Val	Leu	Leu	Pro	Lys	Phe
			260					265					270		

Lys Leu Gln Glu Asp Tyr Asp Met Glu Ser Val Leu Arg His Leu Gly  
275 280 285

Ile Val Asp Ala Phe Gln Gln Gly Lys Ala Asp Leu Ser Ala Met Ser  
290 295 300

Ala Glu Arg Asp Leu Cys Leu Ser Lys Phe Val His Lys Ser Phe Val  
305 310 315 320

Glu Val Asn Glu Glu Gly Thr Glu Ala Ala Ala Ser Ser Cys Phe  
325 330 335

Val Val Ala Glu Cys Cys Met Glu Ser Gly Pro Arg Phe Cys Ala Asp  
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His Pro Phe Leu Phe Phe Ile Arg His Asn Arg Ala Asn Ser Ile Leu  
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Phe Cys Gly Arg Phe Ser Ser Pro  
370 375

<210> 10

<211> 8

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic  
Peptide

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<210> 11

<211> 8

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic  
Peptide

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Phe Val Val Ala Glu Cys Cys Met  
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<210> 12

<211> 22

<212> DNA

<213> Artificial Sequence

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<223> Description of Artificial Sequence: Synthetic

## Peptide

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<210> 13  
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<223> Description of Artificial Sequence: Synthetic  
Peptide

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<211> 24  
<212> DNA  
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 <212> DNA  
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 <210> 21  
 <211> 18  
 <212> PRT  
 <213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic  
Peptide

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Asn Pro Glu Arg Ser Thr Asn Phe Pro Asn Gly Glu Gly Ala Ser Ser  
1 5 10 15

Gln Arg

<210> 22

<211> 17

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic  
Peptide

<400> 22

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1 5 10 15

Arg

<210> 23

<211> 9

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic  
Peptide

<400> 23

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<210> 24

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<212> PRT

<213> Artificial Sequence

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<223> Description of Artificial Sequence: Synthetic  
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Peptide

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